ONTARIO MINISTRY OF ENVIRONMENT
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OPERATING SUMMARY

1974

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TOWN OF
BRADFORD
WATER POLLUTION CONTROL PLANT

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1974

Bradford : water pollution
control plant.

81630

Ontario

MINISTRY OF THE ENVIRONMENT

MINISTER
Honourable William G. Newman

DEPUTY MINISTER
E. Biggs

ASSISTANT DEPUTY MINISTER
REGIONAL OPERATIONS
J. Barr

REGIONAL OPERATIONS DIVISION

DIRECTOR, CENTRAL REGION
P. Cockburn

MANAGER, UTILITY OPERATIONS
A. Thomas

BRADFORD

WATER POLLUTION CONTROL PLANT

MINISTRY OF THE ENVIRONMENT

1974 ANNUAL OPERATING SUMMARY

prepared by
Plant Performance Unit
TECHNICAL SERVICES BRANCH
T. Cross, Director

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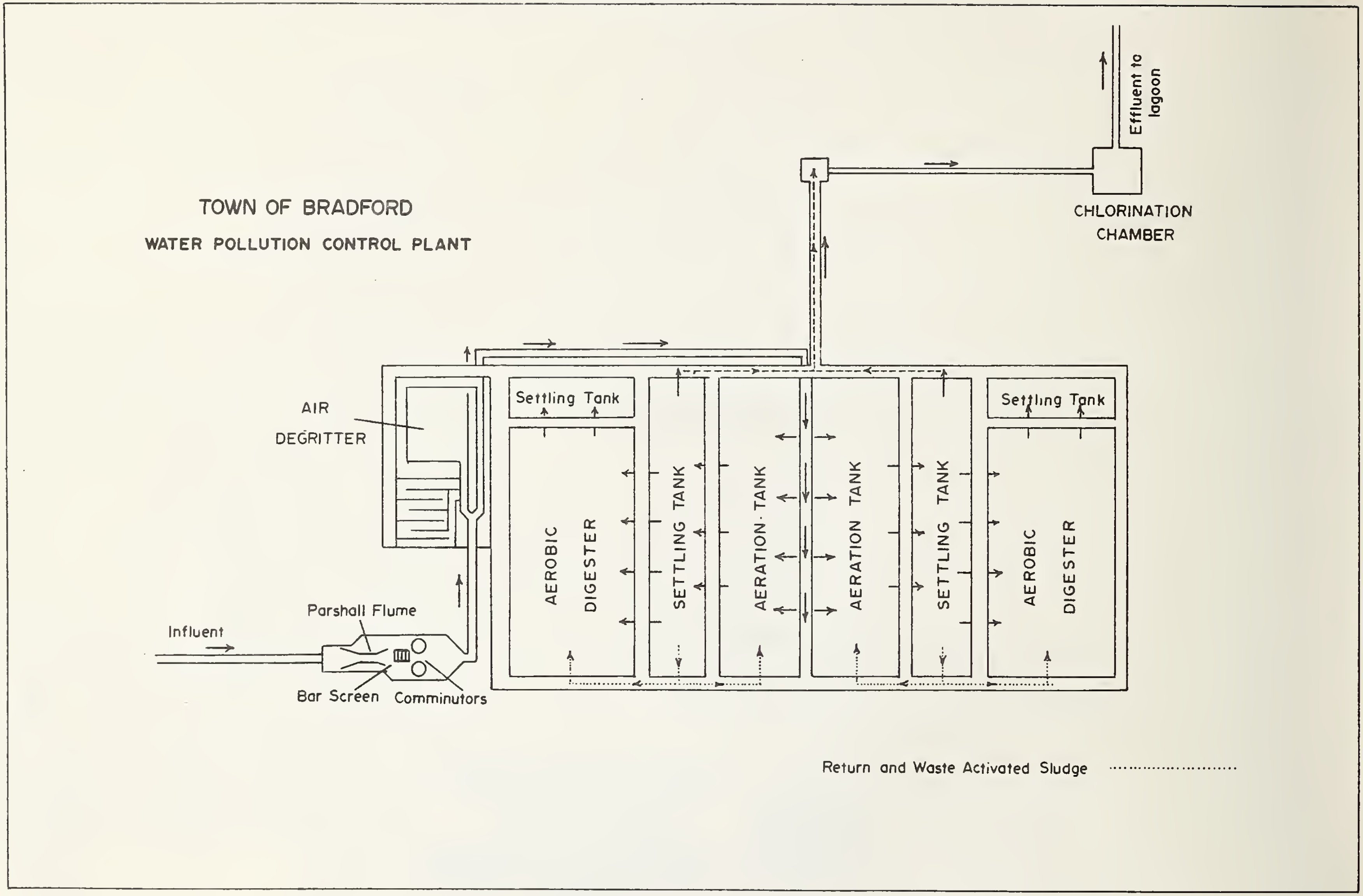


TOWN OF BRADFORD

WATER POLLUTION CONTROL PLANT

DESIGN DATA

Project:	Bradford (town) WPCP
Project No:	1-0035-66
Treatment:	High Rate Activated Sludge
Design Flow:	0.86 MGD
BOD:	Raw Sewage - 230 mg/l
SS:	Raw Sewage - 275 mg/l

PRETREATMENT

COMMINUTION CHAMBER:
Two channels 1.9'w x 6.5' x 1.5 (avg)
with comminutors

BAR SCREEN:
In channel between comminutors

AIR DEGRITTER:
9.75' x 13' x 9.6' (avg)
Volume: 7,600 I. gal.
Detention: 13 min.

BIOLOGICAL TREATMENT

AERATION TANKS:
Two, 17.5' x 62' x 12.75' swd
Volume: 173,000 I. Gal.
Detention: 4.8 hours

SETTLING TANKS:
Two, 14' x 62' x 12.75' (avg)
Volume: 106,000 I. Gal.
Detention: 3.0 hour
Overflow rate: 495 gpd/sq. ft.

AEROBIC DIGESTERS:
Two, 50' x 32' x 17.5'
Volume: 350,000 I. Gal.

DIGESTER SETTLING TANKS:
Two, 9' x 32' x 9.1'
Volume: 25,000 I. Gal.

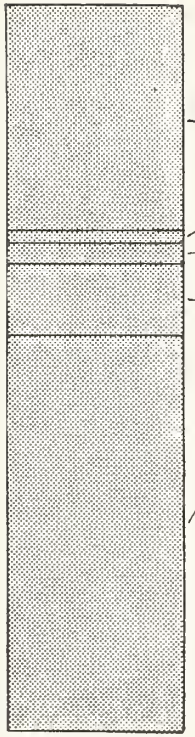
BLOWERS:
Three, Type: Roots Connersville
Size: 2650 cfm at 8.5 psi

CHLORINATION:
in manhole

LAGOON
10 acres

ANNUAL COSTS

1974 OPERATING COSTS



● SALARIES & WAGES	29 %
● EMPLOYEE BENEFITS	2 %
● TRANSPORTATION & COMMUNICATIONS	3 %
● SERVICES	9 %
● SUPPLIES & EQUIPMENT	57 %
● AQUISITION / CONSTRUCTION OF PHYSICAL ASSETS	0 %
● TRANSFER PAYMENTS	0 %
● OTHER TRANSACTIONS	0 %

YEARLY OPERATING COSTS

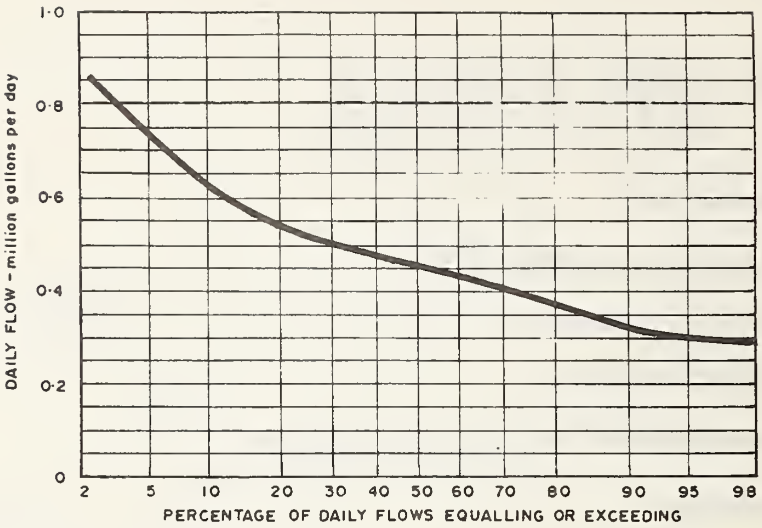
YEAR	SEWAGE TREATED in million gallons	TOTAL OPERATING COSTS	UNIT COSTS	
			$/M.G.	¢/lb BOD
1974	175	56498	323	12

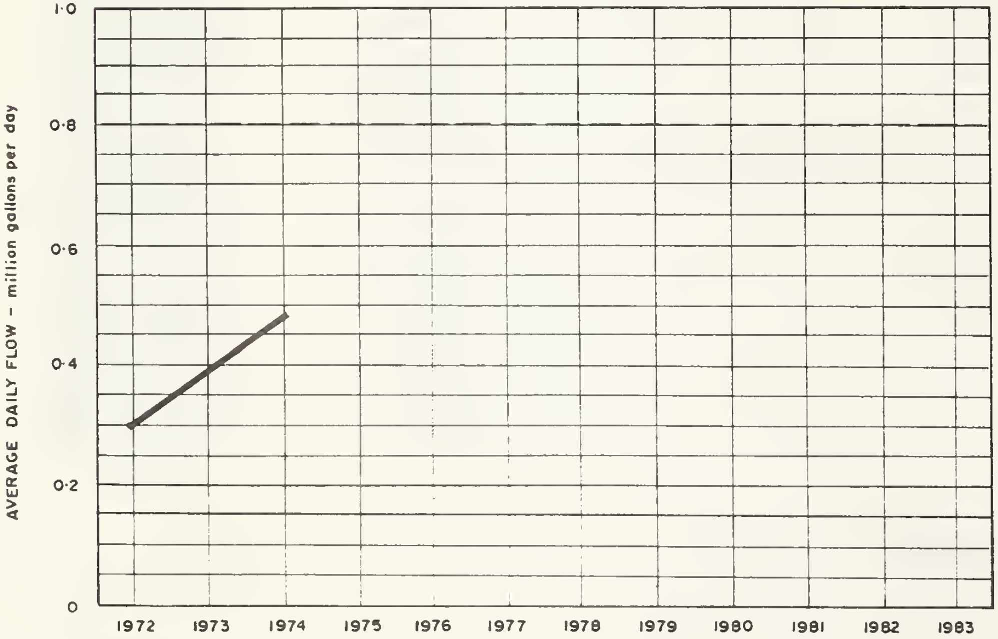
OPERATING EXPENDITURES

Regular Staff	$ 14212	$
Casual (Unclassified) Staff	2288	
TOTAL SALARIES AND WAGES		16500
TOTAL EMPLOYEE BENEFITS		1177
TOTAL TRANSPORTATION AND COMMUNICATIONS		1508
Insurance	674	
Sludge Haulage	3535	
Repairs and Maintenance	593	
Other Services	56	
TOTAL SERVICES		4858
Machinery and Equipment	10144	
Chemicals	998	
Utilities	16745	
Other Supplies and Equipment	4568	
TOTAL SUPPLIES AND EQUIPMENT		32455
TOTAL AQUISITION/CONSTRUCTION OF PHYSICAL ASSETS		
TOTAL TRANSFER PAYMENTS		
OTHER TRANSACTIONS		
GRAND TOTAL	GRAND TOTAL $	56498

PROCESS DATA

FLOWS



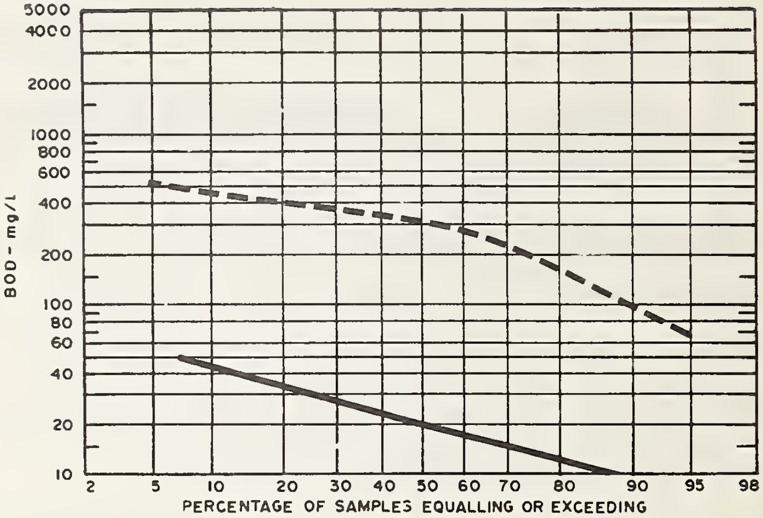


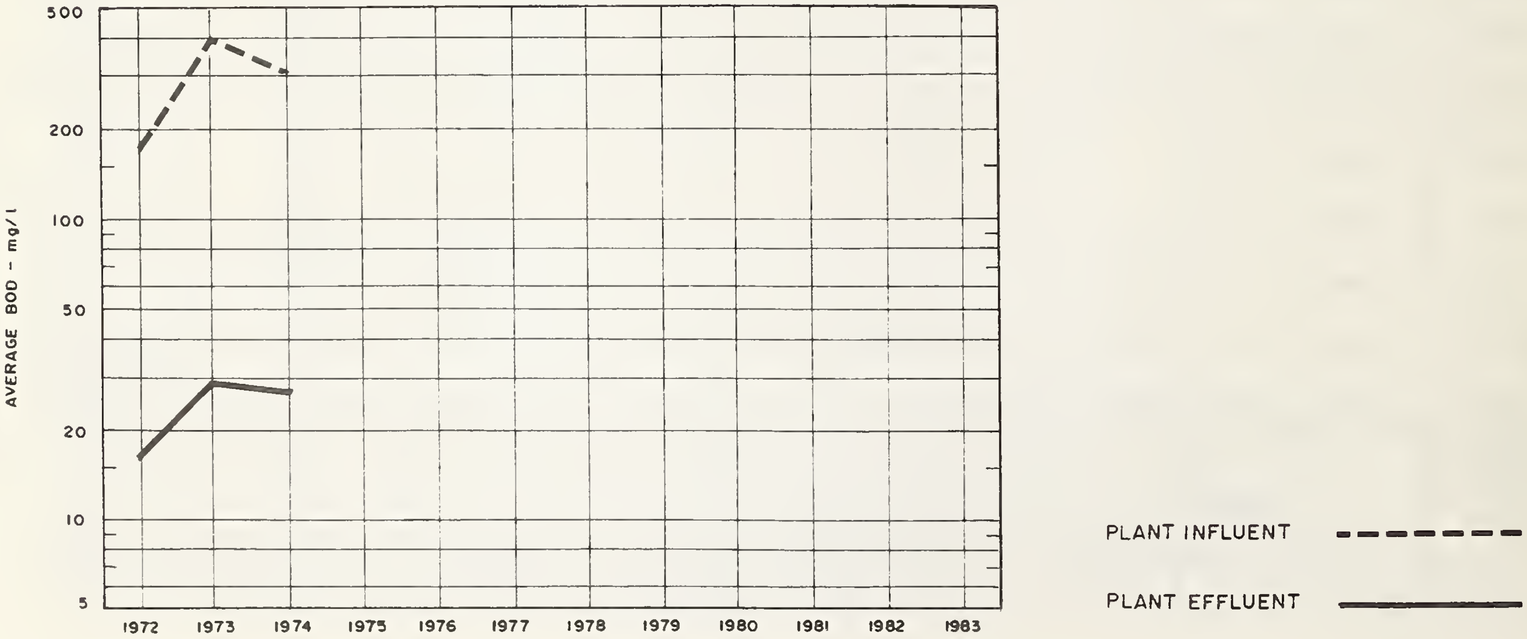
DESIGN CAPACITY - - - - - - - -

PLANT PERFORMANCE

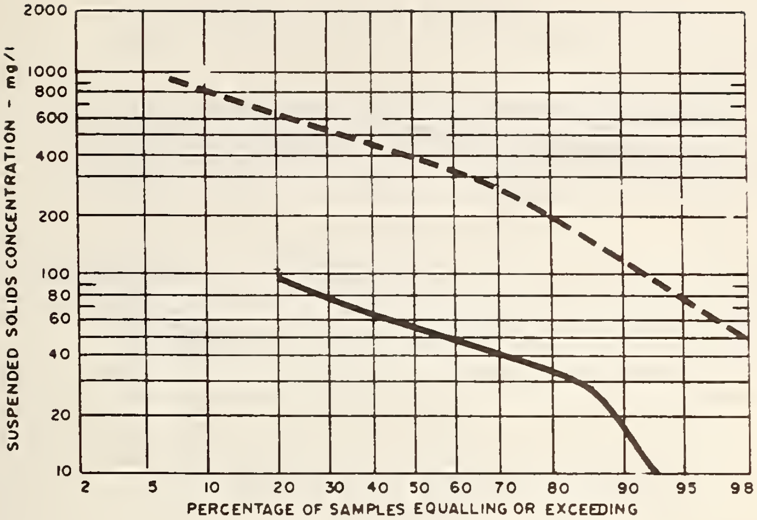
MONTH	FLOWS			BIOCHEMICAL OXYGEN DEMAND				SUSPENDED SOLIDS				PHOSPHORUS	
	TOTAL FLOW million gallons	AVERAGE DAY mil. gal	MAXIMUM DAY mgd	INFLUENT mg/l	EFFLUENT mg/l	REDUCTION %	REDUCTION 10^3 pounds	INFLUENT mg/l	EFFLUENT mg/l	REDUCTION %	REDUCTION 10^3 pounds	INFLUENT mg/l P	EFFLUENT mg/l P
JAN	13.8	.45	1.10	413				450				11.0	
FEB	14.7	.52	.92	400				725				14.0	
MAR	13.9	.45	.98	360	22	94	47.0	350	700			10.0	
APR	17.1	.57	1.47	340				450				8.5	
MAY	18.0	.58	1.00	100	28	72	13.0	235	30	87	36.9	7.0	6.5
JUNE	13.0	.43	.52	340	45	87	38.4	301	105	65	25.5	9.4	6.8
JULY	13.0	.42	1.05	103	40	61	8.2	220	60	73	20.8	4.9	5.4
AUG	13.7	.44	.73					350					
SEPT	13.5	.44	.57	120	10	92	14.9	500	38	92	62.3	10.0	4.9
OCT	14.2	.46	.71	320	22	93	42.3	518	65	87	64.3	9.7	7.3
NOV	15.3	.51	.84	300	22	93	42.5	471	50	89	64.4	9.2	7.7
DEC	14.9	.48	1.04	380	22	94	53.3	734	48	93	102.2	11.2	6.0
TOTAL	175.1	-	-	-	-	-		-	-	-		-	-
AVG.	14.6	.48	MAXIMUM 1.47	305	27	91	40.6	448	104	77	50.2	9.7	6.3
No. of Samples	-	-	-	19	14	-	-	205	14	-	-	18	12

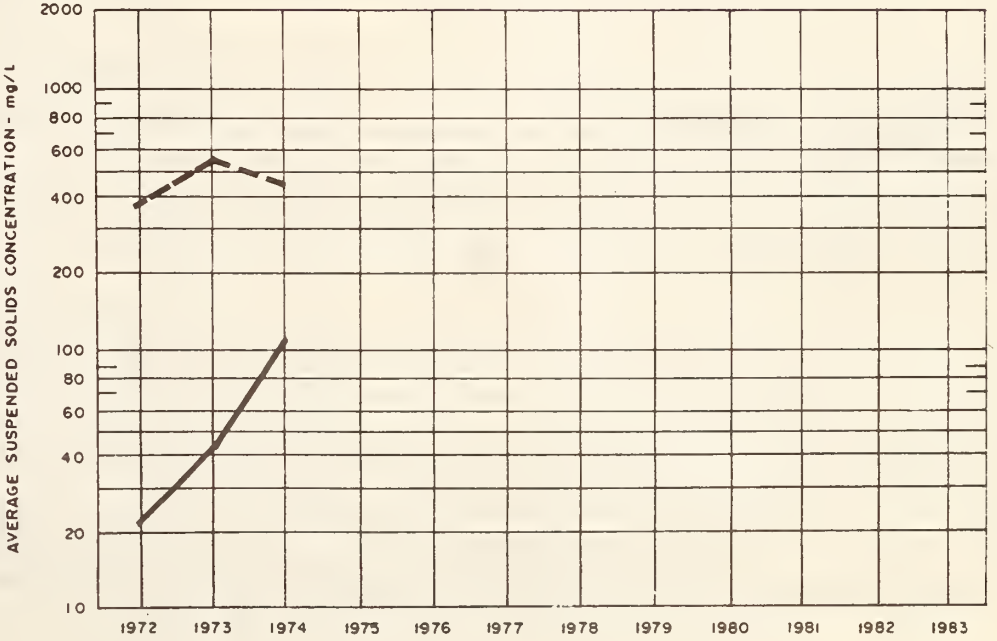
BIOCHEMICAL OXYGEN DEMAND





SUSPENDED SOLIDS

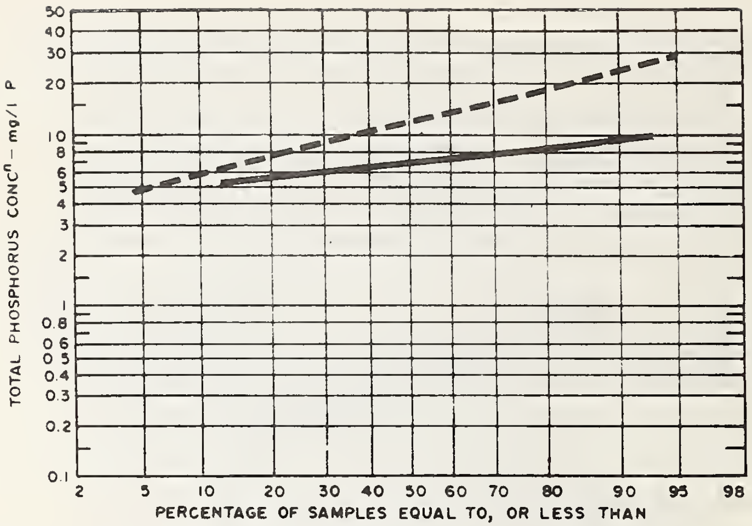




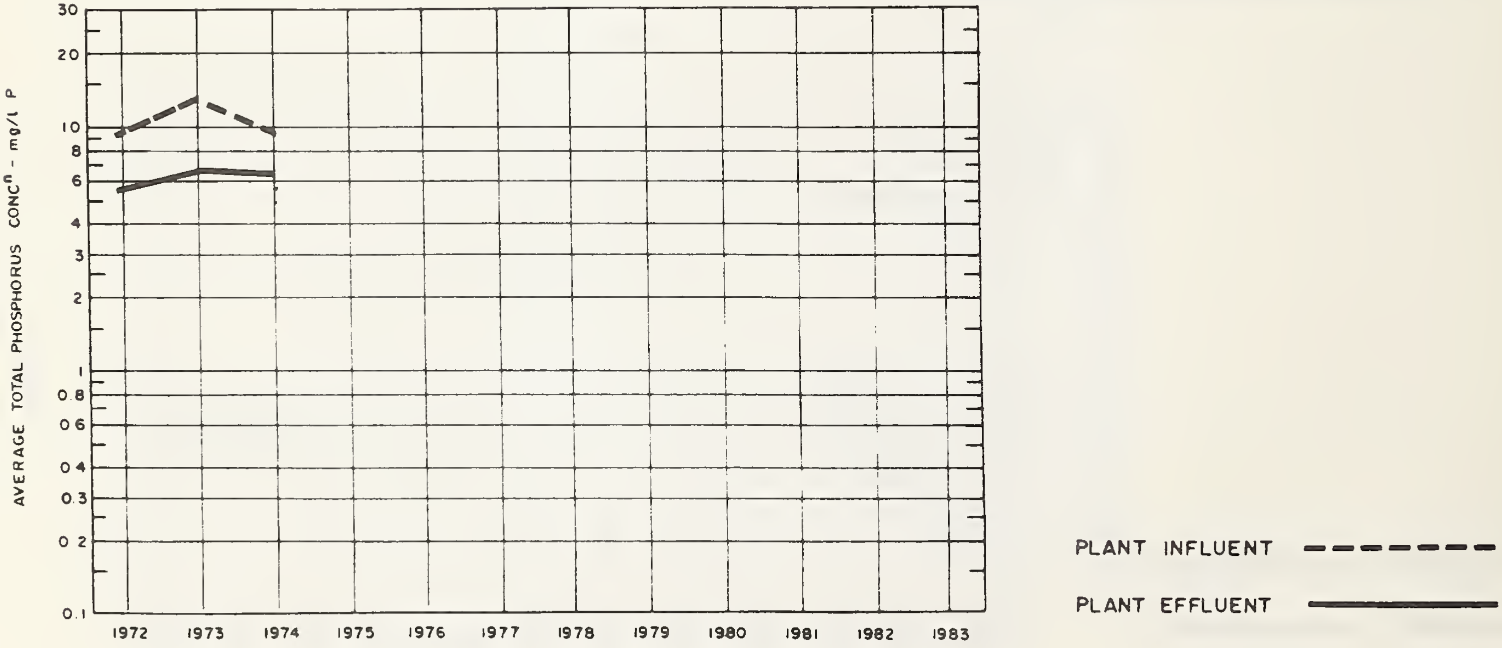
PLANT INFLUENT - - - - - -

PLANT EFFLUENT ———

PHOSPHORUS



TOTAL PHOSPHORUS CONCⁿ - mg/l P
50
40
30
20
10
8
6
5
4
3
2
1
0.8
0.6
0.5
0.4
0.3
0.2
0.1
2
5
10
20
30
40
50
60
70
80
90
95
98
PERCENTAGE OF SAMPLES EQUAL TO, OR LESS THAN



AVERAGE TOTAL PHOSPHORUS CONCⁿ - mg/l P
30
20
10
8
6
4
3
2
1
0.8
0.6
0.4
0.3
0.2
0.1
1972
1973
1974
1975
1976
1977
1978
1979
1980
1981
1982
1983
PLANT INFLUENT
PLANT EFFLUENT

TREATMENT DATA

MONTH	GRIT	CHLORINATION		AERATION			WASTE SLUDGE			AEROBIC DIGESTER			
	QUANTITY REMOVED cubic feet	Cl_2 USED pounds	AVG. DOSAGE mg/l	MLSS CONC mg/l	F/M day^{-1}	AIR USED $\frac{1000 \text{ ft}}{\text{lb BOD}}$	QUANTITY 10 gallons	SUSPENDED SOLIDS mg/l	VOL. SOLIDS %	QUANTITY REMOVED 10^3 gallons	SUSPENDED SOLIDS mg/l	VOL SOLIDS %	AMOUNT HAULED cubic yards
JAN	109			3600	.30			4100	81	27.3	11000		162
FEB	125			3200	.36			6800	73	43.5	15000	68	258
MAR	87			3100	.30			7000	75	13.6	15000	64	81
APR	57			2600	.45					32.3			192
MAY	8	52	3.3	2600	.45					17.0			101
JUNE	8	1135	8.7	3700	.21					185.3	27000	66	1100
JULY	88	1056	8.1	5000	.05					134.8		56	800
AUG	46	901	6.6	4600						4.3	48000	55	25
SEPT	40	916	6.7	3500	.08					45.5	19000	51	270
OCT.	30	913	6.4	2900	.32					8.4	21000	55	50
NOV	30	492	6.2	2500	.35					23.6	39000	57	140
DEC	50			3400	.32					64.1	44000	59	380
TOTAL	678	5465	–	–	–	–		–	–	599.7	–	–	3559
AVG.	3.8 cu. ft/mil gal	911	7.1	3400	.26			6000	76	50.0	27000	59	296

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BRADFORD WATER POLLUTION CONTROL PLANT. ANNUAL OPERATING SUMMARY.

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